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The IEEE Standard Dictionary of Electrical and Electronics Terms

Sixth Edition

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The IEEE Standard Dictionary of Electrical and Electronics Terms

Sixth Edition

Standards Coordinating Committee 10, Terms and Definitions
Jane Radatz, Chair

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point of change between periodic and aperiodic damping is called critical damping. *Note:* An instrument is considered for practical purposes to be critically damped when overshoot is present but does not exceed an amount equal to one-half the rated accuracy of the instrument. *See also:* accuracy rating; moving element. (IA) [60]

(7) The generic term ascribed to the numerous complex energy dissipating mechanisms in a system. As an identifying parameter of a specific seismic response spectrum, the percent of critical damping is assumed to be constant. (PE/SWG) C37.81-1989r

(8) (mechanical) A dynamic property that indicates the ability of a structure to dissipate energy. *Note:* The phenomenon of damping is represented by the damping ratio, a percentage of critical damping. After being forced to deflect and allowed to vibrate freely, structures with zero damping vibrate indefinitely. Structures with critical damping return to their static or neutral position in the shortest time without oscillation. (PE/SUB) 693-1984r, C37.122.1-1993

(9) A dynamic property of a vibrating structure that indicates its ability to dissipate mechanical energy. The phenomenon of damping is represented by a quantity called the damping factor, which is expressed as a percentage of critical damping. After being forced to deflect and allowed to freely vibrate, structures with zero damping will vibrate with a harmonic motion indefinitely. Structures with critical damping will creep back to their static or neutral position with no velocity reversal. (PE/SWG) C37.100-1992

damping amortisseur An amortisseur the primary function of which is to oppose rotation or pulsation of the magnetic field with respect to the pole shoes. (EEC/PE) [119]

damping fluid (accelerometer) (gyros) (inertial sensors) A fluid that provides viscous damping forces or torques to the inertial sensing element. *See also:* flotation fluid. (AE) 528-1994

damping magnet A permanent magnet so arranged in conjunction with a movable conductor such as a sector or disk as to produce a torque (or force) tending to oppose any relative motion between them. *See also:* moving element. (EEC/PE) [119]

damping torque (synchronous machines) The torque produced, such as by action of the amortisseur winding, that opposes the relative rotation, or changes in magnitude, of the magnetic field with respect to the rotor poles. (PE) [9]

damping torque coefficient (synchronous machines) A proportionality constant that, when multiplied by the angular velocity of the rotor poles with respect to the magnetic field, for specified operating conditions, results in the damping torque. (PE) [9]

damp location Partially protected locations under canopies, marquees, roofed open porches, and like locations, and interior locations subject to moderate degrees of moisture, such as some basements, some barns, and some cold-storage warehouses. (NEC/NESC) [86]

danger or hazard buoy (navigation aid terms) Classified as: obstruction, wreck, telegraph, cable, fish net, dredging. *See also:* buoy. (AE) 172-1983w

dap To cut and form a recess in timbers for making a joint. (PE/T&D) 751-1990

DARE *See:* Differential Analyzer Replacement.

dark adaptation (illuminating engineering) The process by which the retina becomes adapted to a luminance less than about 0.034 cd/m^2, (2.2 × 10^{-5} cd/in^2), (0.01 fL). (EEC/IE) [126]

dark current (1) (diode-type camera tube) The current that flows in the output lead of the target in the absence of any external irradiation. Units: amperes. (ED) 503-1978w

(2) (fiber optics) The external current that, under specified biasing conditions, flows in a photosensitive detector when there is no incident radiation. (Std100) 812-1984w

(3) (photoelectric device) The current flowing in the absence of irradiation. *See also:* dark current; dark-current pulses; electrode; photoelectric effect. (ED/NPS) [84], 161-1971w, 398-1972r

dark-current pulses (phototubes) Dark-current excursions that can be resolved by the system employing the phototube. *See also:* phototube. (NPS) 175-1960w

darkening (electroplating) The production by chemical action, usually oxidation, of a dark colored film (usually a sulfide) on a metal surface. *See also:* electroplating. (EEC/PE) [119]

dark pulses Pulses observed at the output electrode when the photomultiplier is operated in total darkness. These pulses are due primarily to electrons originating at the photocathode. (NPS) 398-1972r

dark space, cathode *See:* cathode dark space.

dark space, Crookes *See:* cathode dark space.

dark-trace screen (cathode-ray tubes) A screen giving a spot darker than the remainder of the surface. *See also:* cathode-ray tube. (Std100) [84]

dark-trace tube (1) (electronic navigation) A cathode-ray tube having a special screen that changes color but does not necessarily luminesce under electron impact, showing, for example, a dark trace on a bright background. *See also:* cathode-ray tube; navigation. (Std100) [84]

(2) A type of cathode-ray tube having a bright face, on which signals are displayed as dark traces or dark blips; sometimes used as a storage tube or long-persistence display because the dark traces remain on the screen until erased by heat or electron bombardment. This device is now obsolete. *Synonym:* skiatron. (AE) 686-1990w

dark trace tube display device A CRT display device whose electron beam causes the display surface of the tube to darken rather than to brighten. For example, the image may be viewed by illumination from the rear as a reverse image against the otherwise transparent or translucent face of the tube. (C) 610.10-1994

D'Arsonval current (medical electronics) (solenoid current) The current of intermittent and isolated trains of heavily damped oscillations of high frequency, high voltage, and relatively low amperage. *See also:* D'Arsonvalization. (EMB) [47]

D'Arsonvalization (medical electronics) The therapeutic use of intermittent and isolated trains of heavily damped oscillations of high frequency, high voltage, and relatively low amperage. *Note:* This term is deprecated because it was initially ill-defined and because the technique is not of contemporary interest. (EMB) [47]

dart leader The downward leader of a subsequent stroke of a multiple-stroke lightning flash. (PE/SUB) 998-1996

DASD *See:* direct-access storage device.

D* *See:* D-star.

data (1) (programmable digital computer systems in safety systems of nuclear power generating stations) A representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation or processing by a programmable digital computer. (C) 610.10-1994

(2) (station control and data acquisition) (supervisory control, data acquisition, and automatic control) Any representation of a digital or analog quantity to which meaning has been assigned. (PE/SWG/SUB) 999-1992, C37.1-1994, C37.100-1992

(3) (test pattern language) The binary information that is stored in or read out of a memory array. (C/TT) 660-1986w

(4) (A) (data management) (software) A representation of facts, concepts, or instructions in a manner suitable for communication, interpretation, or processing by humans or by automatic means. *Note:* "Data" is plural for datum, but is often used as a collective noun, as in "The data is in this file."

See also: data type; logical data; null data; numeric data; pointer data. **(B) (data management) (software)** Anything observed in the documentation or operation of software that deviates from expectations based on previously verified software products or reference documents. *Synonym:* documentation. (C) 610.12-1990, 610.5-1990

ta abstraction (A) (software) The process of extracting the essential characteristics of data by defining data types and their associated functional characteristics and disregarding representation details. *See also:* encapsulation; information hiding. **(B) (software)** The result of the process in definition (A). (C) 610.12-1990

ta-access operation A processor-initiated load, store, or lock that involves a data-format copy and (for lock operations) a data-update action (such as swap or add). (C/MM) 1596.5-1993

ta access register A register that is used for arithmetic associated with random-access of data. (C) 610.10-1994

ta acquisition (station control and data acquisition) (supervisory control, data acquisition, and automatic control) The collection of data. (PE/SWG/SUB) 999-1992, C37.1-1994, C37.100-1992

ta acquisition system (1) (station control and data acquisition) (supervisory control, data acquisition, and automatic control) A system that receives data from one or more locations. *See also:* telemetering. (PE/SUB) C37.1-1994

(2) A centralized system that receives data from one or more remote points—a telemetering system. Data may be transported by either analog or digital telemetering. (PE/SWG) C37.100-1992

ta administrator An individual who is responsible for the definition, organization, supervision, and protection of data within some organization. *See also:* database administrator. (C) 610.5-1990

ta aggregate A collection of two or more data items that are treated as a unit. *Synonyms:* aggregate; group item. *See also:* composite data element. (C) 610.5-1990

ta attribute A characteristic of a unit of data. (C) 610.5-1990

ta bank (A) A collection of data libraries. *Note:* A record contains one or more items, a file contains one or more records, a library contains one or more files, and a data bank contains one or more libraries. **(B)** A collection of data relating to a particular subject area. *Note:* The data may or may not be machine-readable. (C) 610.5-1990

tabase (1) (A) (data management) (software) A collection of logically related data stored together in one or more computerized files. *Note:* Each data item is identified by one or more keys. *See also:* database management system. **(B) (data management) (software)** In CODASYL, the collection of all the record occurrences, set occurrences, and areas controlled by a specific schema. (C) 610.5-1990

(2) A collection of data fundamental to a system. (C/SE) 1074-1995

(3) A collection of related data stored in one or more computerized files in a manner that can be accessed by users or computer programs via a database management system. (C/SE) J-STD-016-1995

tabase access method A technique for organizing and storing a physical database in computer storage. (C) 610.5-1990

tabase administration (DBA) The responsibility for the definition, operation, protection, performance, and recovery of a database. (C) 610.5-1990

tabase administrator (DBA) An individual who is responsible for the definition, operation, protection, performance, and recovery of a database. *See also:* data administrator. (C) 610.5-1990

tabase command language (DBCL) A procedural data manipulation language used to access a database through a database management system. *See also:* database manipulation language. (C) 610.5-1990

database creation The process of naming, allocating space, formatting, and defining a database. *See also:* database definition; database design. (C) 610.5-1990

database definition (A) The process of translating a conceptual schema for a database into a data storage schema. *See also:* database creation; database design; redefinition. **(B)** The result of such a translation. (C) 610.5-1990

database description language *See:* data definition language.

database design (A) The process of developing a conceptual schema for a database that will meet a user's requirements. *Synonym:* implementation design. *See also:* database creation; database definition. **(B)** The result of the process in definition (A). (C) 610.5-1990

database engine A software engine that is specially designed for database applications; performs low-level database operations such as record creation, editing, and deletion. *See also:* relational engine. (C) 610.10-1994

database extract A file, each record of which contains data items selected from a database based on a particular criterion. (C) 610.5-1990

database integrity The degree to which the data in a database are current, consistent and accurate. *See also:* data integrity; database security; integrity. (C) 610.5-1990

database key A field in a database that identifies a record in that database. (C) 610.5-1990

database management system (DBMS) (1) A computer system involving hardware, software, or both that provides a systematic approach to creating, storing, retrieving and processing information stored in a database. A DBMS acts as an interface between computers' programs and data files as well as between users and the database. It may include backup/recovery, checkpoint processing, and ad-hoc query capability. (C) 610.5-1990

(2) An integrated set of computer programs that provide the capabilities needed to establish, modify, make available, and maintain the integrity of a database. (C/SE) J-STD-016-1995

database manipulation language *See:* data manipulation language.

database organization The manner in which a database is structured; for example, a hierarchical organization, a relational organization. *See also:* reorganization. (C) 610.5-1990

database record (A) A collection of data elements that are stored in a database. *See also:* record. **(B)** A collection of hierarchically dependent segments (one root and all its descendants) within a hierarchical database. *See also:* record. (C) 610.5-1990

database reorganization *See:* reorganization.

database security The degree to which a database is protected from exposure to accidental or malicious alteration or destruction. *See also:* data security; database integrity. (C) 610.5-1990

database segment *See:* segment.

database server On a network, a server that provides access to a database at the record level; that is, the server sends and locks only the records affected by a particular requestor. *See also:* disk server; file server; mail server; network server; print server; terminal server. (C) 610.7-1995

database sublanguage *See:* data sublanguage.

database system A software system that supports multiple applications using a common database. (C) 610.5-1990

Database Task Group (DBTG) A task group of the CODASYL Programming Language Committee that established a set of standards for specification and design of network database structures. *See also:* CODASYL database. (C) 610.5-1990

data bit (1) A single entity of information that is transmitted across a serial signalling media. A bit assumes one of two values: logic "0" or logic "1." A data bit may convey control, address, information, or frame check sequence (FCS) data. (EMB) 1073.3.1-1994, 1073.4.1-1994

(2) The smallest signaling element used by the physical layer for transmission of packet data on the medium. One of the PDUs for the physical layer (the other is the arbitration signal). (C/MM) 1394-1995

data block *See:* block.

data-break *See:* direct memory access.

data breakpoint A breakpoint that is initiated when a specified data item is accessed. *Synonym:* storage breakpoint. *Contrast:* code breakpoint. *See also:* dynamic breakpoint; epilog breakpoint; programmable breakpoint; prolog breakpoint; static breakpoint. (C) 610.12-1990

data broadcall An operation wherein participating slaves capture the data that are placed on the data lines by the responding slave during a read cycle. (C/MM) 1096-1988

data broadcast An operation wherein participating slaves capture the data that are placed on the data lines by the active master during a write cycle. (C/MM) 1096-1988

data buffer register A register in a central processing unit or peripheral device capable of receiving or transmitting data at different data transfer rates. *See also:* input buffer register. (C) 610.10-1994

data bus A bus used to communicate data to and from a processing unit or a storage device. *See also:* bidirectional bus. (C) 610.10-1994

data cache An area of high-speed buffer storage, used to store data and operands. *Contrast:* instruction cache. (C) 610.10-1994

data card A punch card that contains data to be used by a computer program. *See also:* source data card. (C) 610.10-1994

data carrier Material that serves as a data medium or to which a data medium is applied and that facilitates the transport of data; for example, a punch card, a disk, or a plastic card with a magnetic surface that serves as the data medium. *See also:* data medium. (C) 610.10-1994, 610.5-1990

data cell *See:* storage cell.

data certification The determination that data have been verified and validated. *See also:* data producer certification; data user certification. (C/DIS) 1278.3-1996

data chain *See:* composite data element.

data chain bus A connection by which electrical signals are transmitted and/or received at multiple circuit elements. (C) 610.10-1994

data channel *See:* input-output channel.

data channels (test pattern language) All memory devices have one or more (up to 16) independent data inputs or outputs. Each of these is called a data channel. (C/TT) 660-1986w

data character A character used for packet payload or packet header. A data character represents one of the values of a byte, i.e., 0–255 (decimal). Only N_chars are used as data characters. *See also:* link character; normal character. (BA/C) 1355-1995

data characteristic (software) (software unit testing) An inherent, possibly accidental, trait, quality, or property of data (for example, arrival rates, formats, value ranges, or relationships between field values). (C/SE) 1008-1987r, 610.12-1990

data circuit A circuit used to transmit data. *Synonym:* duplex circuit. (C) 610.7-1995

data circuit-terminating equipment (DCE) (1) A device that provides the signal conversion and coding between the data terminal equipment (DTE) and the network carrier facility. Note that in the context of an ITU-T X.25 network, for example, the DCE performs functions at the network end of an access line to the network. (COM/C/LM) 802.9a-1995, 8802-9-1996

(2) A device that interfaces between the data terminal equipment (DTE) and the line. (C) 610.7-1995

data code *See:* code.

data collection station *See:* data input station.

data communication equipment (1) The equipment that provides the functions required to establish, maintain, and terminate a connection, as well as the signal conversion, and coding required for communication between data terminal equipment and data circuit. (COM) 168-1956w

(2) An equipment that transmits data from one point to another. (C) 610.7-1995

data communications (1) (data transmission) The movement of encoded information by means of communications techniques. (PE) 599-1985w

(2) A data transfer between data source and data destination via one or more data links. (C) 610.7-1995

data compaction Any technique used to encode data in order to reduce the amount of storage it requires. *Contrast:* data compression. (C) 610.5-1990

data compression Any technique used to reduce the amount of storage required to store data. *Contrast:* data compaction. (C) 610.5-1990

data concentrator A concentrator that permits a common transmission medium to serve more data sources than there are channels available within the transmission medium. (C) 610.7-1995

data connection The interconnection of two or more data circuits by means of switching equipment to enable data transmission to take place between DTEs. *See also:* virtual data connection. (C) 610.7-1995

data conversion To change data from one form of representation to another; for example, to convert data from an ASCII representation to an EBCDIC representation. (C) 610.5-1990

data converter A device whose purpose it is to convert data from one representation to an equivalent representation. (C) 610.10-1994

data coupling A type of coupling in which output from one software module serves as input to another module. *Synonym:* input-output coupling. *Contrast:* close coupling; common-environment coupling; content coupling; control coupling; hybrid coupling. (C) 610.12-1990

data cycle (A) (FASTBUS acquisition and control) The portion of a FASTBUS operation in which a master either sends data to or receives data from an attached slave. It begins with the master causing a data sync transition and terminates with the master receiving a data acknowledge transition from the slave. **(B)** A period in which data are valid and are acknowledged. This occurs when acknowledge is asserted at the end of a transaction and on intermediate acknowledges during a block transfer. 1196-1987

data deciphering key A key used for the decipherment of an (N)-layer SDU. (It is not used to decipher other keys.) (C/LM) 802.10-1992

data declaration source statements Source statements that reserve or initialize memory at compilation time. (C/SE) 1045-1992

data definition A description of the format, structure, and properties of a data item, data element, or data structure. (C) 610.5-1990

data definition language (DDL) (A) A language for describing the organization of data within a database. *Note:* In some software, the logical organization is described; in some, both the logical and physical organizations are described. **(B)** A language used to describe the logical structure of a database. *Synonyms:* data description language; database description language; schema definition language; schema language. *Contrast:* data manipulation language. *See also:* database manipulation language. (C) 610.5-1990

data density The amount of data that can be stored in one unit of data medium. For example, the number of bits stored in an inch of magnetic tape medium. (C) 610.5-1990

data description language *See:* data definition language.

data dictionary (1) (A) (software) A collection of the names of all data items used in a software system, together with relevant properties of those items, for example, length of data item, representation, etcetera. **(B) (software)** A set of definitions of data flows, data elements, files, data bases, and processes referred to in a leveled data flow diagram set. *See also:* data; data flow diagram; database; file. (C/SE) 729-1983s

(2) (data management) A collection of entries specifying the name, source, usage, and format of each data element used in a system or set of systems. *Synonym:* data element dictionary. *See also:* data directory. (C) 610.5-1990

data dictionary/directory *See:* data dictionary.

data dictionary system A software system that maintains and manages a data dictionary. (C) 610.5-1990

data directory A collection of entries specifying the data name, source, location, ownership, usage and format of each data element used in some system or set of systems. *See also:* data dictionary. (C) 610.5-1990

data element (A) A uniquely named and defined component of a data definition; a data "cell" into which data items (actual values) can be placed. For example, the data element AGE, into which data items 1, 2, ... can be placed. *Note:* The terms **data element** and **data item** are often used interchangeably or with the reverse definitions from those given here. No standard of use exists at this time. *Synonym:* cell. *See also:* attribute; data item. **(B)** A data definition as in definition (A) that cannot be divided into other individually named data definitions. *See also:* attribute; data item. (C) 610.5-1990

data element dictionary *See:* data dictionary.

data element tag *See:* code.

data enciphering key A key used for the encipherment of an (N)-layer SDU. (It is not used to encipher other keys.) (C/LM) 802.10-1992

data encryption standard (DES) A private key cryptography standard promoted by the United States government for use with private or unclassified information. (BA/C) 896.3-1993

data entry To input data into a computer system. (C) 610.5-1990

data entry device An input device used to prepare data so that a computer can accept it. For example, a keyboard, or barcode scanner. (C) 610.10-1994

data exception An exception that occurs when a program attempts to use or access data incorrectly. *See also:* addressing exception; operation exception; overflow exception; protection exception; underflow exception. (C) 610.12-1990

data exchange (A) The use of data by more than one computer program or system. **(B)** The movement of data between two or more programs or systems. *See also:* data interchange; exchange data. (C) 610.5-1990

data field *See:* attribute.

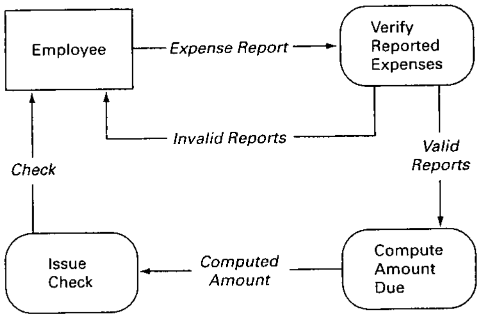
data file *See:* file.

data flow The sequence in which data transfer, use, and transformation are performed during the execution of a computer program. *Contrast with:* control flow (C) 610.12-1990

data flow architecture A computer architecture in which execution is controlled only by the data needed for that operation and not the order in which instructions are stored in memory. *Contrast:* control flow architecture. (C) 610.10-1994

data flowchart *See:* data flow diagram.

data flow diagram (DFD) (software) A diagram that depicts data sources, data sinks, data storage, and processes performed on data as nodes, and logical flow of data as links between the nodes. *Synonyms:* data flow graph; data flowchart. *Contrast:* control flow diagram; data structure diagram.



data flow diagram

(C) 610.12-1990

data flow graph *See:* data flow diagram.

data flowpath A segment of the overall plant data flow that represents one attribute sent from a providing activity to a receiving activity. (PE) 1150-1991

data flow trace *See:* variable trace.

data frame Consists of the Destination Address, Source Address, Length Field, logical link control (LLC) Data, PAD, and Frame Check Sequence. (C/LM) 802.3u-1995

data glossary A collection of entries specifying a data definition and a specification of its uses. (C) 610.5-1990

datagram (1) A unit of data that is transferred as a single, non-sequenced, unacknowledged unit. (C/DIS) 1278.2-1995
(2) *See also:* connectionless service. (C) 610.7-1995

data hierarchy A set of directed relationships between two or more units of data, such that each unit has one and only one owner. *See also:* hierarchy. (C) 610.5-1990

data-hold (data processing) A device that converts a sampled function into a function of a continuous variable. The output between sampling instants is determined by an extrapolation rule or formula from a set of past inputs. (IM) [52]

data independence The degree to which the logical view of a database is immune to changes in the physical structure of the database. (C) 610.5-1990

data input (semiconductor memory) The inputs whose states determine the data to be written into the memory. (C/TT) 662-1980s

data input/output (semiconductor memory) The ports that function as data input during write operations and as data output during read operations. (C/TT) 662-1980s

data input sheet User documentation that describes, in a worksheet format, the required and optional input data for a system or component. *See also:* user manual. (C) 610.12-1990

data input station A workstation that is used primarily as an input device. *Synonyms:* data collection station; input workstation. (C) 610.10-1994

data integrity (1) The degree to which a collection of data is complete, consistent, and accurate. *Synonym:* data quality. *See also:* data security; database integrity; integrity. (C) 610.5-1990

(2) The condition or state in which data has not been altered or destroyed in an unauthorized manner. (C/LM) 802.10-1992

data interchange The use of data by two or more different systems. *See also:* data exchange. (C) 610.5-1990

data interchange format A standarized data file format allowing data interchange between software packages on personal computers. For example, data interchange between an electronic spread sheet and a word processorcould be accomplished by converting the spread sheet data to data interchange format, then to the format required for the word processor. (C) 610.2-1987

data invariance A technique for mapping together big endian and little endian domains by mapping together bits with the same significance. This shall be done with some reference data width, typically either 32 bits or the implementation-dependent local data bus width. Futurebus+ is address invariant, but not necessarily data invariant. (BA/C) 896.3-1993

data item A value contained in a data element; for example the data element AGE might contain data items 1, 2, ... *Note:* The terms **data element** and **data item** are often used interchangeably or with the reverse definitions from those given here. No standard of use exists at this time. *See also:* data element. (C) 610.5-1990

Data Language I (DL/I) A database manipulation language used with IMS hierarchical databases. (C) 610.13-1993

data library A set of related files, tables, or sets. (C) 610.5-1990

data link (DL) **(1)** An assembly of data terminals and the interconnecting circuits operating according to a particular method that permits information to be exchanged between the terminals. (COM/LM) 168-1956w
(2) **(test, measurement, and diagnostic equipment)** Any information channel used for connecting data processing equipment to any input, output, display device, or other data processing equipment, usually at a remote location. (MIL) [2]
(3) **(data management)** The physical means of connecting two computers together for the purpose of transmitting and receiving data. (C) 610.5-1990
(4) The services required to allow a local entity to establish a connection-oriented communications channel with a remote entity and exchange packets over the channel. (EMB) 1073.3.1-1994
(5) The assembly of parts of two data terminals that are controlled by a link protocol and an interconnecting data circuit to enable data to be transferred from a data source to a data sink. (C) 610.7-1995
(6) An assembly of two or more terminal installations and the interconnecting communications channel operating according to a particular method that permits information to be exchanged; in this context the term *terminal installation* does not include the data source and the data sink. (C/LM/PE) 799-1987r, 8802-2-1994

data link escape character A transmission control character that changes the meaning of a limited number of contiguously following characters or coded representations to provide supplementary transmission control characters. (C) 610.7-1995

data link layer **(1)** The conceptual layer of control or processing logic existing in the hierarchical structure of a station that is responsible for maintaining control of the data link. The data link layer functions provide an interface between the station higher layer logic and the data link. These functions include address/control field interpretation, channel access and command PDU/response PDU generation, transmission, and interpretation. (C/LM/PE) 799-1987r, 8802-2-1994
(2) **(A)** In open systems interconnection (OSI) architecture, the layer that provides services to transfer data over a transmission link between open systems. **(B)** In ISO/IEC local area network (LAN) standards, the data link layer is formed by the logical link control (LLC) sublayer and the medium access control (MAC) sublayer. Using ISO/IEC 8802, the data link layer is formed by the operation of the LLC sublayer (ISO 8802-2) over the MAC sublayer service offered by the DQDB layer. (C/LM) 8802-6-1994
(3) The second layer of the OSI seven-layer model; provides error-free communication across the physical link. *Note:* This layer takes a bit stream from the physical layer, frames it into a data packet, appends leading and trailing headers for detection and correction of damaged packets and moves it to the network layer. It also performs the inverse operation on packets received from the network layer. *See also:* application layer; client layer; entity layer; logical link control sublayer; medium access control (MAC) sublayer; network layer; physical layer; presentation layer; session layer; sublayer; transport layer. (C) 610.7-1995
(4) The conceptual layer of control or processing logic existing in the hierarchical structure of a station that is responsible for maintaining control of the data link. The data link layer functions provide an interface between the station higher layer logic and the data link. These functions include address/control field interpretation, channel access and command PDU/response PDU generation, sending, and interpretation. (C/LM) 8802-2-1994

data link service access point (DLSAP) The point at which logical connection between Data Link layers occurs. In IEEE 1073, both BCCs and DCCs have DLSAPs. (EMB) 1073.3.1-1994

data logger **(1)** **(power-system communication)** A system to measure a number of variables and make a written tabulation and.or record in a form suitable for computer input. *See also:* digital. (PE) 599-1985w
(2) A device that accepts PDUs from the network and stores them for later replay according to either the time sequence in which they were originally received or the time sequence as indicated by their time stamps. (C/DIS) 1278.3-1996

data logging **(1)** **(supervisory control, data acquisition, and automatic control)** The recording of selected data on suitable media. (PE/SUB) C37.1-1994
(2) An arrangement for the alphanumerical representation of selected quantities on log sheets; papers, magnetic tape, or the like, by means of an electric typewriter or other suitable devices. (PE/SWG) C37.100-1992

data-logging equipment Equipment for numerical recording of selected quantities on log sheets or paper or magnetic tape or the like, by means of an electric typewriter or other suitable device. (PE/SWG) [56], C37.100-1981s

data management The function of controlling the acquisition, analysis, storage, retrieval, and distribution of data. (C) 610.5-1990

data manipulation language (DML) A language used to retrieve, insert, delete, or modify the data in a database. *Synonym:* database manipulation language. *Contrast:* data definition language. *See also:* Datatrieve; dBASE; DL/I; Easytrieve; FOCUS; INQUIRE; MODEL 204; NATURAL; RAMIS; SQL. (C) 610.13-1993, 610.5-1990

data medium A material in or on which data are or may be represented. *See also:* data carrier; media; prerecorded data medium. (C) 610.10-1994, 610.5-1990

data model **(1)** A description of data that consists of all entities represented in a data structure or database and the relationships that exist among them. *See also:* logical data model; physical data model; schema; view. (C) 610.5-1990
(2) A conceptual representation of the information requirements, data flows, and data relationships for an organization, facility, activity, or process. (PE) 1150-1991

data multiplexer A device that permits two or more data sources to share a common transmission medium. (C) 610.7-1995

data name One or more characters used to identify a data element. (C) 610.5-1990

data normalization *See:* normalization.

data origin authentication The corroboration that the source of data received is as claimed. This service, when provided by the (N)-layer, provides the corroboration to an (N+1)-entity that the source of the data is the claimed peer (N+1)-entity. (C/LM) 802.10-1992

data output **(semiconductor memory)** The outputs whose states represent the data read from the memory. (C/TT) 662-1980s

Data Overrun Error (DOR) bit A bit in the Bus Error register of all S-modules. An S-module sets this bit to indicate that the module has received input data from the M-module when the S-module was not ready to receive it. (C/TT) 1149.5-1995

ATA packet Any packet other than a HEADER, PACKET COUNT, or ACKNOWLEDGE packet. (C/TT) 1149.5-1995

ata path Signal lines on a bus associated with data. (C/MM) 959-1988r

ata phase A period within a transaction used to transfer data. (BA/C) 10857-1994, 896.3-1993, 896.4-1993

ata processing (DP) (1) The systematic performance of operations upon data, such as data manipulation, merging, sorting, and computing. *Synonym:* information processing. *See also:* administrative data processing; automatic data processing; business data processing; commercial data processing; distributed data processing; integrated data processing; mechanical data processing; office automation; remote-access data processing. (C) 610.2-1987
(2) (emergency and standby power) Pertaining to any operation or combination of operations on data. (IA) 446-1987s

ata processing cycle *See:* processing cycle.

ata processing system A system, including computer systems and associated personnel, that performs input, processing, storage output, and control functions to accomplish a sequence of operations on data. *See also:* information system. (C) 610.10-1994, 610.2-1987

ata processor* (1) (A) A processor capable of performing operations on data. For example: a desk calculator or tabulating machine, or a computer. **(B)** A person who operates a computer. (C) 610.10-1994
(2) Any device capable of being used to perform operations on data, for example, a desk calculator, tape recorder, analog computer, or digital computer. (IA) 446-1987s
* Deprecated.

ata producer certification The determination by the data producer that data have been verified and validated against documented standards of criteria. (C/DIS) 1278.3-1996

ata quality *See:* data integrity.

ata quality objective The qualitative and quantitative statements that specify the quality of data required to support decisions for any process requiring radiochemical analysis (radioassay). (NI) N42.23-1995

ata rate (1) The rate at which a data path (e.g., a channel) carries data, measured in bits per second (b/s). (EMB/PE/SWG/SUB) 1073.3.1-1994, 1073.4.1-1994, 999-1992, C37.1-1994, C37.100-1992
(2) *See also:* transfer rate. (C) 610.7-1995

ata reconstruction (date processing) The conversion of a signal defined on a discrete-time argument to one defined on a continuous-time argument. (IM) [52]

ata record *See:* record.

ata reduction (1) The transformation of raw data into a more useful form, for example, smoothing to reduce noise. (MIL) [2]
(2) (data management) Any technique used to transform data from raw data into a more useful form of data. For example, grouping, summing, or averaging related data. (C) 610.5-1990

ata resource A purposely organized body of data that is of use to some person or group of people. (C) 610.5-1990

ata security The degree to which a collection of data is protected from exposure to accidental or malicious alteration or destruction. *See also:* data integrity; database security. (C) 610.5-1990

ata-sensitive fault A fault that causes a failure in response to some particular pattern of data. *Synonym:* pattern-sensitive fault. *Contrast:* program-sensitive fault. (C) 610.12-1990

ata service unit A device that provides bipolar conversion functions to ensure proper signal shaping and adequate signal strength in a digital communications environment. *See also:* channel service unit. (C) 610.7-1995

data set (1) (data management) A named collection of related records. *Synonym:* file. *See also:* partitioned data set. (C) 610.5-1990
(2) (data transmission) A modem serving as a conversion element and interface between a data machine and communication facilities. *See also:* modem. (PE) 599-1985w

data signaling rate The rate of data transmission, generally expressed as bits per second. *See also:* baud rate. (C) 610.10-1994, 610.7-1995

data sink (1) (data transmission) The equipment which accepts data signals after transmission. (PE) 599-1985w
(2) The functional unit that accepts transmitted data. *Contrast:* data source. (C) 610.7-1995

data source (1) (data transmission) The equipment which supplies data signals that enter into a data link. (PE) 599-1985w
(2) The functional unit that originates data for transmission. *Contrast:* data sink. (C) 610.7-1995

data space The address space which devices may have that is recommended for use in data operations. There are few constraints applied to data space uses. *See also:* CSR space. 960-1993

data stabilization (navigation aid terms) (vehicle-borne navigation systems) The stabilization of the output signals with respect to a selected reference invariant with vehicle orientation. (AE) 172-1983w

data stack A stack that may be used for passing parameters between Forth definitions. (BA/C) 1275-1994

data station *See:* station.

data storage description language A language used to define the organization of stored data in terms that are independent of any particular storage device or operating system. (C) 610.5-1990

data storage schema A data structure that describes the manner in which data items are physically stored in storage. *See also:* database definition. (C) 610.5-1990

data stream (A) All data that is transmitted through an input-output channel in a single read or write operation. **(B)** A continuous stream of data elements being transmitted, or intended for transmission. (C) 610.10-1994

data striping RAID storage A form of RAID storage, known as level 0, in which data is striped across the multiple drives by system block size. *Note:* No parity check is performed. (C) 610.10-1994

data structure (data management) (software) A physical or logical relationship among data elements, designed to support specific data manipulation functions. *Synonym:* logical structure. (C) 610.12-1990, 610.5-1990

data structure-centered design A software design technique in which the architecture of a system is derived from analysis of the structure of the data sets with which the system must deal. *See also:* input-process-output; modular decomposition; object-oriented design; rapid prototyping; stepwise refinement; structure clash; structured design; transaction analysis; transform analysis. (C) 610.12-1990

data structure diagram A diagram that depicts a set of data elements, their attributes, and the logical relationships among them. *Contrast:* data flow diagram. *See also:* entity-relationship diagram.

Employee Record									
Emp. No. (4I)	Emp. Name			Emp. Address				Dept. No. (3I)	Emp. Sal. (4I)
	First (10C)	Mid. (1C)	Last (16C)	Street (20C)	City (20C)	State (2C)	Zip (9I)		

I = Integer C = Character

data structure diagram

(C) 610.12-1990

data sublanguage (DSL) A subset of another language, called the host language, that is used to perform database operations. *Synonym:* database sublanguage. (C) 610.5-1990

data submodel *See:* external schema.

data switch A switch device that is designed to handle data communications rather than voice communications. (C) 610.7-1995

data switching exchange In networking, the equipment installed at a single location to provide circuit switching, packet switching, or both functions. (C) 610.7-1995

data tablet A graphical input device, used as a locator, consisting of a flat surface with a sensing apparatus, such as a grid of wires, and a pointing device such as a mouse, puck, or stylus to indicate tablet locations. *Synonyms:* bit pad; writing tablet. *See also:* acoustic tablet; digitizer; graphic tablet; locator; stylus. (C) 610.10-1994, 610.6-1991

data terminal (data transmission) A device which modulates or demodulates data between one input-output device and a data transmission link, or both. (PE) 599-1985w

data terminal equipment (DTE) **(1)** The equipment comprising the data source, the data sink, or both. (COM/LM) 168-1956w
(2) A device that serves as a data source and/or a data sink. (COM/C/LM) 610.7-1995, 802.9a-1995, 8802-9-1996
(3) Any source or destination of data connected to the LAN. (C/LM) 802.3u-1995

data test **(A)** The recorded results of test. **(B)** A set of data developed specifically to test the adequacy of a computer run or system. They may be actual data taken from previous operations or artificial data created for this purpose. (PE/SWG/SUB) C37.1-1994, C37.100-1992

data trace *See:* variable trace.

data transfer **(1)** The passing of data over the multiplexed address/data bus, between the bus owner and the replying agent(s), during the reply phase of a transfer operation. (C/MM) 1296-1987s
(2) The phase of a cycle during which data are transferred between the master and the selected slaves. It starts when the active master asserts the data strobe and ends after the responding slave acknowledges the transfer and all participating slaves indicate that they are ready to participate in a new cycle. (C/MM) 1096-1988

data transfer bus (DTB) **(1)** One of the four buses provided by the backplane. The data transfer bus allows masters to direct the transfer of binary data among themselves and slaves. (BA/C) 1014-1987
(2) One of the two subbuses defined in the VSB specification. It allows masters to direct the transfer of binary data to and from slaves. The DTB contains 32 multiplexed address/data lines and the associated control signals that are required to execute cycles on the VSB. (C/MM) 1096-1988

data-transfer-bus cycle A sequence of level transitions on the signal lines of the DTB that result in the transfer of an address or an address and data between a master and a slave. The data-transfer-bus cycle is divided into two portions: the address broadcast and zero or more data transfers. (BA/C) 1014-1987

data-transfer interface An interface that enables a connection between a computer and a peripheral unit such as a magnetic disk. *See also:* enhanced small device interface; small computer systems interface; ST-506 interface. (C) 610.10-1994

data translation The modification of the physical representation of data used in one hardware/software environment so that it is compatible with a different hardware/software environment. (C) 610.5-1990

data transmission The sending of data from one place to another. (C/PE) 599-1985w, 610.7-1995

Datatrieve A database manipulation language used primarily for database applications under Digital's VAX/VMS environment. (C) 610.13-1993

data type (software) A class of data, characterized by the members of the class and the operations that can be applied to them. For example, character type, enumeration type, integer type, logical type, real type. *See also:* strong typing. (C) 610.12-1990

datatype A collection of distinguished values, together with a collection of characterizing operations on those values. (C/PA) 1224-1993, 1224.1-1993, 1327-1993, 1328-1993, 1351-1994

data unit The smallest unit of the contents of a file that the filestore actions can manipulate. (C/PA) 1238.1-1994

data user certification The determination by the application sponsor or designated agent that data have been verified and validated as appropriate for the specific Modeling and Simulation (M&S) usage. (C/DIS) 1278.3-1996

data validation The documented assessment of data by subject area experts and its comparison to known or best-estimate values.

— *Data producer validation.* That documented assessment within stated criteria and assumptions.

— *Data user validation.* That documented assessment of data as appropriate for use in an intended M&S.

(C/DIS) 1278.3-1996

data value The actual value that is stored in a data item. For example, the numeric value of the data item SALARY may be 20 000. *Synonym:* value. (C) 610.5-1990

data verification The use of techniques and procedures to ensure that data meets specified constraints defined by data standards and business rules.

— *Data producer verification.* The use of techniques and procedures to ensure that data meets constraints defined by data standards and business rules derived from process and data modeling.

— *Date user verification.* The use of techniques and procedures to ensure that data meets user specified constraints defined by data standards and business rules derived from process and data modeling and to ensure that data are transformed and formatted properly.

(C/DIS) 1278.3-1996

data volatility The rate of change, over a specified period of time, in the values of stored data items. (C) 610.5-1990

dataway *See:* CAMAC dataway.

data window A set of coefficients by which corresponding samples in the data record are multiplied to more accurately estimate certain properties of the signal, particularly frequency domain properties. Generally, the coefficient values increase smoothly toward the center of the record. (IM) 1057-1994

date/time-of-day clock A clock that shall be maintained by the BCC, providing an indication of time, from year to milliseconds, with a resolution of 1 ms. (EMB) 1073.3.1-1994

datum **(1)** Singular for data. (C) 610.12-1990, 610.5-1990
(2) Singular form for data. (C) 610.10-1994

daughter *See:* child node.

daughter board A printed circuit board that attaches to another, often the main system board, or motherboard, to provide additional functionality or performance. *Synonym:* piggyback board. (C) 610.10-1994

davit (power line maintenance) An assembly attached to a support or assembled on a structure to provide a rigging point for rope blocks, chains, or hoists so as to manipulate various pieces of apparatus. The davit is a rigid assembly and does not swivel. (PE/T&D) 458-1990, 516-1995

davit arm A rigid upswept cantilever arm used to support an insulator string. (PE/T&D) 751-1990

daylight factor (illuminating engineering) A measure of daylight illuminance at a point on a given plane expressed as a ratio of the illuminance on the given plane at that point to the simultaneous exterior illuminance on a horizontal plane from the whole of an unobstructed sky of assumed or known luminance distribution. Direct sunlight is excluded from both interior and exterior values of illuminance. (EEC/IE) [126] ments involving size of computer storage, a prefix indicating 2^{20}, or 1 048 576. (C) 1084-1986w

megabyte Either 1 000 000 bytes or 2^{20} bytes. *Notes:* 1. The user of these terms shall specify the applicable usage. If the usage is 2^{10} or 1024 bytes, or multiples thereof, then note 2 below shall also be included with the definition. 2. As used in IEEE Std 610.10-1994, the terms kilobyte (kB) means 2^{10} or 1024 bytes, megabyte (MB) means 1024 kilobytes, and gigabyte (GB) means 1024 megabytes. *See also:* gigabyte. (C) 610.10-1994

megacycle One million cycles. (C) 610.10-1994

megahertz (MHz) **(1)** A unit of frequency equal to 1 000 000 cycles per second. (C/LM) 802.7-1989
(2) A unit of frequency equal to 1 000 000 Hz, that is, 10^6 Hz. (C) 610.7-1995

Meissner oscillator An oscillator that includes an isolated tank circuit inductively coupled to the input and output circuits of an amplifying device to obtain the proper feedback and frequency. *See also:* oscillatory circuit. (AP) 145-1983s

mel A unit of pitch. By definition, a simple tone of frequency 1000 hertz, 40 decibels above a listener's threshold, produces a pitch of 1000 mels. *Note:* The pitch of any sound that is judged by the listener to be *n* times that of the 1-mel tone is *n* mels. (SP) [32]

melting channel The restricted portion of the charge in a submerged resistor or horizontal-ring induction furnace in which the induced currents are concentrated to effect high energy absorption and melting of the charge. *See also:* induction heating. (IA) 169-1955w, 54-1955w

melting-speed ratio **(1)** The ratio between between 0.1 s and 300 s or 600 s minimum melting currents, whichever is specified, which designates the relative speed of the fuse link. (PE/SWG) C37.40-1993
(2) (of a fuse) A ratio of the current magnitudes required to melt the current-responsive element at two specified melting times. *Notes:* 1. Specification of the current wave shape is required for time less than one-tenth of a second. 2. The lower melting time in present use is 0.1 s, and the higher minimum melting current times are 100 a for low-voltage fuses and 300 s or 600 s, whichever specified, for high-voltage fuses. (PE/SWG) C37.100-1992

melting time (1) (protection and coordination of industrial and commercial power systems) The time required to melt the current-responsive element on a specified overcurrent. Where the fuse is current limiting in less than half-cycle, the melting time may be approximately half or less of the clearing time. (IA) 242-1986r
(2) (of a fuse) The time required for overcurrent to sever the current-responsive element.
(PE/SWG) C37.100-1992, C37.40-1993, C37.40b-1996

member In data management, a subunit contained in a partitioned data set. (C) 610.5-1990

membrane keyboard A type of keyboard in which the keys are not raised, rather it is composed of a semi-flexible plastic sheet with a conductive surface below. *Synonym:* pressure-sensitive keyboard. (C) 610.10-1994

membrane potential The potential difference, of whatever origin, between the two sides of a membrane. *See also:* electrobiology. (EMB) [47]

memory **(1)** All of the addressable storage in a processing unit and other internal storage that is used to execute instructions. *See also:* main storage. (C) 610.10-1994
(2) *See also:* storage; storage medium.

memory action (of a relay) A method of retaining an effect of an input after the input ceases or is greatly reduced, so that this input can still be used in producing the typical response of the relay. *Note:* For example, memory action in a high-speed directional relay permits correct response for a brief period after the source of voltage input necessary to such response is short-circuited. (PE/SWG) C37.100-1992

memory address An address of a particular storage location in memory. (C) 610.10-1994

memory address register A register containing the address of the memory location to be accessed. (C) 610.10-1994

memory agent A module that uses split transactions to assume all the rights and responsibilities of some number of remote memory modules. (BA/C) 896.4-1993

memory allocation and protection **(A)** To allocate physical sections of memory into logical partitions with read/write protection provided within each partition. **(B)** Pertaining to the hardware components that perform the allocation as in (A). (C) 610.10-1994

memory array A matrix of memory locations arranged in a rectangular geometric pattern on an integrated circuit. (C) 610.10-1994

memory bank *See:* bank.

memory board A circuit board that provides random-access memory to a system. (C) 610.10-1994

memory boundary The last address of an aligned data block. The maximum data block size that can be transferred by an IUT Master is the product of data width and data length. (BA/C) 896.4-1993

memory buffer register A register in which a word is stored as it is read from memory or as it is written to memory. *Synonym:* memory data register. (C) 610.10-1994

memory bus A bus connecting memory to the devices which can access it, including the processor and peripheral devices. (C) 610.10-1994

memory capacity **(1)** The maximum number of bits that a memory is capable of storing. (ED) 641-1987w
(2) (software) The maximum number of items that can be held in a given computer memory; usually measured in words or bytes. *See also:* channel capacity; storage capacity. (C) 610.12-1990
(3) (electronic computation) *See also:* storage capacity.

memory cell The smallest subdivision of a memory into which a unit of data has been or can be entered, in which it is or can be stored, and from which it can be retrieved. (ED) 641-1987w

memory compaction **(A)** A storage allocation technique in which the contents of all allocated storage areas are moved to the beginning of the storage space and the remaining storage blocks are combined into a single block. *Synonym:* garbage collection. **(B)** A storage allocation technique in which contiguous blocks of nonallocated storage are combined to form single blocks. (C) 610.12-1990

memory core *See:* magnetic core.

memory cycle (1) (test, measurement, and diagnostic equipment) The time required to read information from memory and replace it. (MIL) [2]
(2) A single complete access (read or write) of memory. (C) 610.10-1994

memory data register *See:* memory buffer register.

memory device A device that contains only memory and implements configuration registers. (C/MM) 1155-1992

memory dump A display of the contents of all or part of a computer's internal storage, usually in binary, octal, or hexadecimal form. *See also:* change dump; dynamic dump; selective dump; snapshot dump; static dump. (C) 610.12-1990

memory management unit (MMU) A device that performs address translation between a CPU's virtual addresses and the physical addresses of some bus; typically, the bus represented by the root node. (BA/C) 1275-1994

memory map **(1)** A diagram that shows where programs and data are stored in a computer's memory. (C) 610.12-1990
(2) A list of all the current addresses in a computer. *Note:* This may indicate what is currently allocated, who is using it and where it is located. *Synonym:* memory map list. (C) 610.10-1994

memory map list *See:* memory map.

memory mapping **(A)** The manner in which an address is translated into a physical address of a storage location. *See also:*

biasing; paging; segmenting. **(B)** The process of translating addresses as in definition (A). (C) 610.10-1994

memory-mode agent An agent that communicates with others by using memory and/or I/O space on the parallel system bus. (C/MM) 1296-1987s

memory-mode system A system in which the agents communicate with one another with data structures in memory and/or I/O space. (C/MM) 1296-1987s

memory object (1) Either a file or shared memory object. When used in conjunction with *mmap*(), a memory object will appear in the address space of the calling process. (C/PA) 9945-1-1996
(2) Either a file or shared memory object. When used in conjunction with Map_Memory, Open_And_Map_Shared_Memory or Open_Or_Create_And_Map_Shared_Memory, a memory object will appear in the calling process's address space. (C/PA) 1003.5b-1995

memory organization An arrangement of memory cells, either by geometrical arrangement in rows and columns, or by the organization of the data to be stored. (ED) 641-1987w

memory relay (A) A relay having two or more coils, each of which may operate independent sets of contacts, and another set of contacts that remain in a position determined by the coil last energized. **(B)** Sometimes erroneously used for polarized relay. *See also:* relay. (EEC) [87]

memory-resident Managed by the implementation in such a way as to provide an upper bound on memory access times. (C/PA) 1003.5b-1995, 9945-1-1996

memory space The address space used for accessing physical memory devices for storage and retrieval of code and data. (C/MM) 1296-1987s

memory window The difference in threshold voltage between the low- and high-conductance logic states of a memory cell. (ED) 641-1987w

MENTOR A block-structured language used widely in computer-aided instruction; characterized by its ability to model a student's knowledge. (C) 610.13-1993

menu (1) A list of options available for selection by the user of a computer system. *Synonyms:* display menu; help menu; menu selection. (C) 610.2-1987, 610.6-1991
(2) A rectangular visual user interface control containing a group of controls used to select an action from a group of choices. (C) 1295-1993

menu bar A visual user interface control that is the bounded area near the top of a window, below the title bar, and above the rest of the window that contains cascade buttons that provide access to other menus. (C) 1295-1993

menu by-pass In a menu-driven system, a feature that permits advanced users to perform functions in a command-driven mode without selecting options from the menus. (C) 610.12-1990

menu-driven Pertaining to a system or mode of operation in which the user directs the system through menu selections. *Contrast:* command-driven. *See also:* menu by-pass. (C) 610.12-1990

menu selection (A) The process of choosing an item from a menu. **(B)** The item chosen from a menu. (C) 610.2-1987

mercury-arc converter, pool-cathode *See:* oscillatory circuit; pool-cathode mercury-arc converter.

mercury-arc rectifier A gas-filled rectifier tube in which the gas is mercury vapor. *See also:* rectification. (ED) [45], [84]

mercury cells Electrolytic cells having mercury cathodes with which deposited metals form amalgams. (EEC/PE) [119]

mercury-contact relays (A) (mercury plunger relay) A relay in which the magnetic attraction of a floating plunger by a field surrounding a sealed capsule displaces mercury in a pool to effect contacting between fixed electrodes. **(B) (mercury-wetted-contact relay)** A form of reed relay in which the reeds and contacts are glass enclosed and are wetted by a film of mercury obtained by capillary action from a mercury pool in the base of a glass capsule vertically mounted. **(C) (mercury-contact relay)** A relay mechanism in which mercury establishes contact between electrodes in a sealed capsule as a result of the capsule's being tilted by an electromagnetically actuated armature, either on pick-up or dropout or both. *See also:* mercury relay. (Std100)

mercury fluorescent lamp (illuminating engineering) An electric discharge lamp having a high-pressure mercury arc in an arc tube, and an outer envelope coated with a fluorescing substance (phosphor) which transforms some of the ultraviolet energy generated by the arc into light. (EEC/IE) [126]

mercury-hydrogen spark-gap converter (dielectric heating) A spark-gap generator or power source which utilizes the oscillatory discharge of a capacitor through an inductor and a spark gap as a source of radio-frequency power. The spark gap comprises a solid electrode and a pool of mercury in a hydrogen atmosphere. *See also:* induction heating. (IA) 169-1955w, 54-1955w

mercury lamp (illuminating engineering) A high intensity discharge (HID) lamp in which the major portion of the light is produced by radiation from mercury operating at a partial pressure in excess of 1.013×10^5 Pa (one atmosphere). Includes clear, phosphor-coated (mercury-fluorescent), and self-ballasted lamps. (EEC/IE) [126]

mercury-lamp ballast *See:* ballast.

mercury-lamp transformer *See:* constant-current (series) mercury-lamp transformer.

mercury motor meter A motor-type meter in which a portion of the rotor is immersed in mercury, which serves to direct the current through conducting portions of the rotor. *See also:* electricity meter. (Std100)

mercury oxide cell A primary cell in which depolarization is accomplished by oxide of mercury. *See also:* electrochemistry. 341

mercury-pool cathode (gas tube) A pool cathode consisting of mercury. (ED) [45], [84]

mercury relay A relay in which the movement of mercury opens and closes contacts. (EEC) [87]

mercury storage A type of storage that utilizes the acoustic wave propagation properties of mercury to store data. *See also:* acoustic delay line. (C) 610.10-19

mercury vapor lamp transformers (power and distribution transformers) (multiple-supply type) Transformers, autotransformers, or reactors for operating mercury or metal iodide vapor lamps for all types of lighting applications, including indoor, outdoor area, roadway, uviarc, and other process and specialized lighting. (PE) C57.12.80-197

mercury-vapor tube A gas tube in which the active gas is mercury vapor. (ED) 161-1971

merge (1) (computers) To combine two or more sets of items into one, usually in a specified sequence. (C) [20],
(2) (data management) To combine the items of two or more sets, all in the same order, into one set in that order. *See also:* balanced merge; bitonic merge; coalesce; collate; merge order-by-merging; unbalanced merge. (C) 610.5-1

merge exchange sort *See:* Batcher's parallel sort.

merge search A sequential search in which the set of search arguments is ordered in the same sequence as the set to be searched; the set is searched sequentially, using the search argument, until an equal or greater search key is found, the former case signifying a successful search, the latter, unsuccessful search; the search for the next search argument begins where the last search left off. (C) 610.5-1

merge sort A sort in which the set to be sorted is divided subsets, the items in each subset are sorted, and the subsets are merged. *Synonym:* merging sort. *See also:* external merge sort; internal merge sort. (C) 610.5-1

merging Reconfiguration function that involves dual ring tions ceasing to use contra-rotating links in favor of a link or station. (C/LM) 802.5c-1 of Lex is a lexical analysis program that can process the specified language. *Note:* Used in writing portions of compilers, as well as in textual pattern matching. (C) 610.13-1993

Lex *See:* LEX.

LF *See:* low frequency.

LFC *See:* load-frequency control.

LHN *See:* long haul network.

liberator tank (electrorefining) Sometimes known as a depositing-out tank, an electrolytic cell equipped with insoluble anodes for the purpose of either decreasing, or totally removing the metal content of the electrolyte by plating it out on cathodes. *See also:* electrorefining. (EEC/PE) [119]

librarian *See:* software librarian.

library *See:* data library; software library; system library.

library automation The application of automated techniques to library operations such as processing of documents, interlibrary communication, and on-line catalogue access. *See also:* MAchine-Readable Cataloging. (C) 610.2-1987

library data model The organizing principles and concepts underlying structured data in a reuse library and the means of representing that structure. (C/SE) 1420.1-1995

library routine (high-level microprocessor language) A function (which returns a value) or a procedure (which does not return a value) supplied with the implementation of the high-level language (HLL). (C/MM) 755-1985w

licensing standard A standard that describes the characteristics of an authorization given by an official or a legal authority to an individual or organization to do or own a specific thing. (C) 610.12-1990

Lichtenberg figure camera (klydonograph) (surge-voltage recorder) A device for indicating the polarity and approximate crest value of the voltage surge by the appearance and dimensions of the Lichtenberg figure produced on a photographic plate or film, the emulsion coating of which is in contact with a small electrode coupled to the circuit in which the surge occurs. *Note:* The film is backed by an extended plane electrode. *See also:* instrument. (EEC/PE) [119]

life (lead-acid batteries for photovoltaic systems) The period during which a fully charged battery is capable of delivering at least a specified percentage of its capacity, generally 80%. (PV) 937-1987r

life cycle *See:* software life cycle; system life cycle.

life-cycle cost The total investment in product development, manufacturing, test, distribution, operation, support, training, and disposal. (C/SE) 1220-1994

life-cycle phase (software verification and validation plans) Any period of time during software development or operation that may be characterized by a primary type of activity (such as design or testing) that is being conducted. These phases may overlap one another; for verification and validation (V&V) purposes, no phase is concluded until its development products are fully verified. (C/SE) 1012-1986r

life-cycle processes The following eight essential functional processes that may be necessary to provide total consumer satisfaction and meet public acceptance. Once the need for a life-cycle process is identified, the life-cycle process is treated as a system for the development of life-cycle process products and their life-cycle processes. The following are the eight essential functional processes.

a) *Development.* The planning and execution of system and subsystem definition tasks required to evolve the system from customer needs to consumer product solutions and their life-cycle processes.
b) *Manufacturing.* The tasks, actions, and activities for fabrication and assembly of engineering test models and brassboards, prototypes, and production of consumer product solutions and their life-cycle process products.
c) *Test.*
    1) The tasks, actions, and activities for planning for evaluation and conducting evaluation of synthesis products against the functional architecture or requirements baseline; or the functional architecture against the requirements baseline.
    2) The tasks, actions, and activities for evaluating the consumer product solutions and their life-cycle processes to measure specification compliance or customer satisfaction.
d) *Distribution.* The tasks, actions, and activities to initially transport, receive, process, assemble, install, test, checkout, train, operate, and, as required, emplace, house, store, or distribute consumer products and life-cycle process products.
e) *Operations.* The tasks, actions, and activities that are associated with the use of the consumer product or a life-cycle process.
f) *Support.* The tasks, actions, and activities to provide supply, maintenance, and support material and facility management for sustaining operations.
g) *Training.* The tasks, actions, and activities to achieve and maintain the knowledge and skill levels necessary to efficiently and effectively perform operations, support, and disposal.
h) *Disposal.* The tasks, actions, and activities to ensure that disposal or recycling of destroyed or irreparable consumer and life-cycle process products and by-products comply with applicable environmental regulations and directives.

(C/SE) 1220-1994

life-cycle process product An end item required to perform a life-cycle process in support of a consumer product. This end item may be a product, process, or service. (C/SE) 1220-1994

lifeline A component consisting of a flexible line for connection to an anchorage or anchorage connector at one end to hang vertically (vertical lifeline), or for connection to anchorages or anchorage connectors at both ends to span horizontally (horizontal lifeline). Serves as a means for connecting other components of a personal fall arrest system to the anchorage. A lifeline serves to extend the range of the user through the slidable connection of a fall arrester in the case of a vertical lifeline or a connector or other device in the case of a horizontal lifeline. (PE/T&D) 1307-1996

life performance curve (illuminating engineering) A curve that represents the variation of a particular characteristic of a light source (luminous flux, intensity, etc.) throughout the life of the source. *Note:* Life performance curves sometimes are called maintenance curves as, for example, lumen maintenance curves. (EEC/IE) [126]

life safety branch (health care facilities) A subsystem of the Emergency System consisting of feeders and branch circuits, meeting the requirements of Article 700 of NFPA 70-1978, National Electrical Code, and intended to provide adequate power needs to ensure safety to patients and personnel, and which can be automatically connected to alternate power sources during interruption of the normal power source. (EMB) [47]

life support equipment (nuclear power generating station) The breathing apparatus, medical supplies, sanitary facilities, and food and water supplies required to sustain operators for an extended period of time during abnormal operating conditions. (PE) 567-1980w

life test *See:* accelerated test.

life test of lamps (illuminating engineering) A test in which lamps are operated under specified conditions for a specified length of time, for the purpose of obtaining information on lamp life. Measurements of photometric and electric characteristics may be made at specified intervals of time during this test. (EEC/IE) [126]

lifetime rated pulse currents (low voltage varistor surge arresters) Derated values of rated peak single pulse transient current for impulse durations exceeding that of an 8×20 μs

stop signal (1) (facsimile) A signal that initiates the transfer of a facsimile equipment condition from active to standby. *See also:* facsimile signal. (COM) 168-1956w
(2) (data management) A signal at the end of a start-stop character that prepares the receiving device for the reception of a subsequent character. *Note:* A stop signal is usually limited to one signal element having any duration equal to or greater than a specified minimum value. (C) 610.5-1990
(3) In asynchronous transmission, a signal following a character that prepares the receiving device for the reception of a subsequent character or block. *Synonym:* stop element. *Contrast:* start signal. (C) 610.7-1995

stop time *See:* deceleration time.

stop valve(s) (1) (control systems for steam turbine-generator units) [throttle valve(s)] Those valve(s) that normally provide fast interruption of the main energy input to the turbine. Throttle valves are sometimes used for turbine control during start-up. *Note:* The term stop valve is defined as an open or closed valve. A throttle valve has some portion of its opening through which it can modulate flow. (PE) 122-1985s
(2) (power system device function numbers) A control device used primarily to shut down an equipment and hold it out of operation. This device may be manually or electrically actuated, but excludes the function of electrical lockout on abnormal conditions. *See also:* lockout relay. (PE/SUB) C37.2-1979s

stopword list *See:* stop list.

storable swimming or wading pool A pool with a maximum dimension of 15 ft and a maximum wall height of 3 ft and is so constructed that it may be readily disassembled for storage and reassembled to its original integrity. (NEC/NESC) [86]

storage (1) (A) (electronic computation) The act of storing information. **(B) (electronic computation)** Any device in which information can be stored, sometimes called a memory device. **(C) (electronic computation)** In a computer, a section used primarily for storing information. Such a section is sometimes called a memory or store (British). *Notes:* 1. The physical means of storing information may be electrostatic, ferroelectric, magnetic, acoustic, optical, chemical, electronic, electric, mechanical, etc., in nature. 2. Pertaining to a device in which data can be entered, in which it can be held, and from which it can be retrieved at a later time. *See also:* store. (C/MIL) [2], [20], [85]
(2) (data management) In a computer, one or more bytes that are used to store data. (C) 610.5-1990
(3) (A) The retention of data in a storage device. **(B)** The action of placing data into a storage device. **(C)** A storage device. **(D)** Any medium in which data can be retained. (C) 610.10-1994

storage access *See:* access.

storage allocation (1) (computers) The assignment of sequences of data or instructions to specified blocks of storage. (C) [20], [85]
(2) (software) An element of computer resource allocation, consisting of assigning storage areas to specific jobs and performing related procedures, such as transfer of data between main and auxiliary storage, to support the assignments made. *See also:* buffer; contiguous allocation; cyclic search; memory compaction; overlay; paging; virtual storage. (C) 610.12-1990

storage assembly (storage tubes) An assembly of electrodes (including meshes) that contains the target together with electrodes used for control of the storage process, those that receive an output signal, and other members used for structural support. *See also:* storage tube. (ED) 158-1962w

storage battery A battery comprised of one or more rechargeable cells of the lead-acid, nickel-cadmium, or other rechargeable electrochemical types. (NEC/NESC) [86]

storage breakpoint *See:* data breakpoint.

storage capacitor A low leakage capacitor on which a data value can be stored. (C) 610.10-1994

storage capacity (1) The amount of data that can be contained in a storage device. *Notes:* 1. The units of capacity are bits, characters, words, etc. For example, capacity might be "32 bits," "10 000 decimal digits," "16 384 words with 10 alphanumeric characters each." 2. When comparisons are made among devices using different character sets and word lengths, it may be convenient to express the capacity in equivalent bits, which is the number obtained by taking the logarithm to the base 2 of the number of usable distinguishable states in which the storage can exist. 3. The storage (or memory) capacity of a computer usually refers only to the internal storage section. (C) 162-1963w
(2) (software) The maximum number of items that can be held in a given storage device; usually measured in words or bytes. *See also:* channel capacity; memory capacity. (C) 610.12-1990
(3) The amount of data that can be contained in a storage device measured in binary characters, bytes, words, or other units of data. (C) 610.10-1994

storage cell (1) (electric energy) (secondary cell or accumulator) A galvanic cell for the generation of electric energy in which the cell, after being discharged, may be restored to a fully charged condition by an electric current flowing in a direction opposite to the flow of current when the cell discharges. *See also:* electrochemistry. (EEC/PE) [119]
(2) (computers) (information) An elementary unit of storage, for example, a binary cell, a decimal cell. *See also:* electrochemistry. (C) [20], [85]
(3) (A) One or more storage elements considered as a unit. **(B)** The smallest subdivision of storage into which a unit of data can be placed, retained, and with which the unit can be retrieved. *Synonym:* data cell. *See also:* binary cell; magnetic cell. (C) 610.10-1994

storage channel A channel that can be used to access a storage device. (C) 610.10-1994

storage device (1) A device in which data can be stored and from which it can be copied at a later time. The means of storing data may be chemical, electrical, mechanical, etc. *See also:* storage. (C) 162-1963w
(2) A device into which data can be placed, in which they can be retained, and from which they can be retrieved. *See also:* store. (C) 610.10-1994

storage display *See:* storage tube display device.

storage efficiency The degree to which a system or component performs its designated functions with minimum consumption of available storage. *See also:* execution efficiency. (C) 610.12-1990

storage element (1) (storage tubes) An area of a storage surface that retains information distinguishable from that of adjacent areas. *Note:* The storage element may be a portion of a continuous storage surface or a discrete area such as a dielectric island. *See also:* storage tube. (ED) 158-1962w, 161-1971w
(2) The basic unit of a storage device, such as a sector, or a track. (C) 610.10-1994

storage-element equilibrium voltage (storage tubes) A limiting voltage toward which a storage element charges under the action of primary electron bombardment and secondary emission. At equilibrium voltage the escape ratio is unity. *Note:* Cathode equilibrium voltage, second-crossover equilibrium voltage, and gradient-established equilibrium voltage are typical examples. *See also:* charge-storage tube. (ED) 158-1962w

storage-element equilibrium voltage, cathode (storage tubes) The storage element equilibrium voltage near cathode voltage and below first-crossover voltage. *See also:* charge-storage tube. (ED) 158-1962w

storage-element equilibrium voltage, collector *See:* charge-storage tube.

storage-element equilibrium voltage, gradient established (storage tubes) The storage-element equilibrium voltage, between first- and second-crossover voltages, at which the es-

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